APPLYING EFFECTS-BASED OPERATIONS
IN SMALL WARS

David Willard Parsons
Lieutenant Colonel
United States Air Force

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Executive Summary

Title: Applying Effects-Based Operations in Small Wars

Author: David Willard Parsons, Lieutenant Colonel, USAF

Thesis: The current model for applying effects-based operations (EBO) requires modifications in order to apply the concept effectively in small wars.

Discussion: In the decade since the end of the Cold War, the US military has sought ways to adapt itself to a new security environment of an entirely different nature than it had prepared itself for the previous half a century. It has produced a plethora of operational concepts as part of this attempt to adapt. Recently the concept of effects-based operations has gained popularity in certain military circles. This paper examines the basic tenets of EBO as put forth by David Deptula. The author explains how the framework proposed to apply EBO--a model developed by Jack Warden--is not suited to the small war environment.

Conclusion: The author asserts that the current model for applying EBO requires modifications in order to apply the concept effectively in small wars; and he offers an alternative framework for applying EBO to the small war environment.

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Introduction

In the decade since the end of the Cold War, the US military community has sought ways to adapt itself to a new security environment, fraught with diffuse threats of an entirely different nature than it had prepared itself for the previous half a century. It has produced a plethora of operational concepts as part of this attempt to adapt. Recently the concept of *effects-based operations* (EBO) has gained popularity in certain military circles--particularly within the Air Force. This paper examines the principles of EBO and notes that the framework proposed to apply these is not suited to the most likely form of future conflict--small wars. *The author asserts that the current model for applying EBO requires modifications in order to apply the concept effectively in small wars;* and he offers an alternative framework for applying EBO to the small war environment.

Responses to a New Security Environment

The disintegration of the Soviet Union, like no other single event since World War II, profoundly altered the security environment facing the United States. Containment of communism was no longer the fundamental tenet of our national security strategy. Curbing the proliferation of nuclear, biological, and chemical weapons; combating international drug trafficking; promoting democratization; and facilitating worldwide political, military, and economic inter-dependence became the primary forces shaping America's security strategy.[1] As the forces of *Globalism* gain momentum, sources of instability will produce effects within wider and wider circles of influence. A new international community, which emphasizes open borders and free markets, provides an environment in which terrorists, drug traffickers, and insurgents can operate with more

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[1] See *A National Security Strategy for a New Century* (Washington, DC: The White House, December 1999), pp. iii-iv.

freedom than ever before. Given the stated U.S. commitment to a more open inter-

national system and a rising American dependence on other countries for both raw

materials and finished goods, these "low-intensity" threats represent increasingly

important factors in the U.S. security picture.

In response to the changing international security environment, the U.S. military

has undergone critical, and sometimes painful, evaluations of force structure and

doctrine. The result has been over a decade of doctrinal drift during which the services

have struggled to reconcile expected levels of performance in a new environment with

capabilities limited by reduced budgets, shrinking manpower pools, and aging equipment.

The Air Force has gone through several iterations of operational philosophy.[2] Each

entailed employing CONUS-based aircraft to respond to crises around the world and

attempted to apply Cold War force structure to new, more diffuse threats. The Army

seemed determined to take its force cuts on the chin and continue with its Cold War

paradigm.[3] It tried incorporating emerging technologies, however, it did so without tying

operational doctrine to new threats.[4] Problematic operations in Kosovo highlighted a

need for change and led to the Army's *Transformation* program to develop a force more

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[2] See Donald B. Rice, *The Air Force and U.S. National Security: Global Reach--Global Power* (Washington DC: Department of the Air Force, June 1990), Merrill A. McPeak, "For the Composite Wing," *Air Power Journal*, Vol. IV, #3 (Fall 1990), and John A. Tirpak, "The Expeditionary Air Force Takes Shape," *Air Force Magazine*, Vol. 80, #6 (June 1997).

[3] See William R. Richardson, "FM 100-5: The AirLand Battle in 1986," *Military Review*, Vol. 78, #1 (January-February 1997).

[4] See Togo D. West and Dennis J. Reimer, *A Statement on the Posture of the United States Army: Fiscal Year 1997* (Office of the Chief of Staff, U.S. Army, Congressional Activities Division), presented to the 2nd Session of the 104th Congress.

appropriate for today's battlefield.[5] The Naval Services published a series of papers that

marked a shift away from large, decisive blue-water battles.[6] Instead, they emphasized

forward presence through expeditionary operations, over-the-horizon amphibious

capabilities, and a focus on littoral warfare. The Navy and Marine Corps were the first to

recognize a need for serious doctrinal change, however their operational concepts

reflected unilateral, service-centric approaches indicative of most early attempts to adapt

to the post-Cold War security environment.

Some efforts to adapt to the post-Cold War security environment have taken a

more integrated approach. A series of Joint Vision documents touted operational

concepts such as *dominant maneuver*, *precision engagement*, *focused logistics*, *full-

dimension protection* and *full spectrum dominance*.[7] Other forward looking military

strategists have put forth the concepts of *network centric warfare* and *rapid decisive

operations*.[8] Amidst this flurry of new operational concepts, one termed *effects-based

operations* (EBO) has come to the fore. Proponents of the concept suggest, "the US

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[5] See Michael Chandler and William Kistner, prods. "The Future of War," *Frontline*. Narr. Will Lyman. PBS, 24 October 2000.

[6] See Sean O'Keefe, …*From the Sea: Preparing the Naval Service for the 21st Century.* (Washington DC: Department of the Navy, September 1992); John H. Dalton, *Forward...From the Sea* (Washington DC: Department of the Navy, September 1994); and C. C. Krulak, "Operational Maneuver from the Sea," in *United States Marine Corps Warfighting Concepts for the 21ˢᵗ Century* ed. J. E. Rhodes (Quantico VA: Marine Corps Combat Development Command), pp. I-1 - I-23.

[7] See Henry H. Shelton, *Joint Vision 2020: America's Military Preparing for Tomorrow* (Washington DC: US Government Printing Office, June 2000), pp. 20-27.

[8] For example see Arthur K. Cebrowski & John Garstka, "Network-Centric Warfare: Its Origin and Future," *Proceedings*, Vol. 124, #1 (January 1998) & Dean Cash, *A Concept for Rapid Decisive Operations: RDO Whitepaper Version 2.0 [Coordinating Draft]* (Norfolk, VA: Joint Forces Command) see URL: <http://www.saclant.nato.int/cde/concept.htm> accessed April 24, 2002.

security establishment incorporate effects-based operations as the foundation of its security strategy as we move into the future."[9]

Effects-Based Operations

In his seminal work on *effects-based operations,* David Deptula pointed to the Gulf War as a watershed event in the history of military campaigning. He argued that the Desert Storm air planners became the first to effectively employ *parallel warfare.* Traditionally military commanders executed phased, or serial, operations in which armies seized objectives, or air forces attacked targets, in a lock-step mechanical fashion. In this type of *serial warfare,* commanders accomplished several intermediate tasks in order to achieve their overall campaign goal. In *parallel warfare*, planners design the campaign to achieve any/all intermediate tasks simultaneously, producing a decisive, paralyzing effect on the enemy. Deptula maintained that employment of an *effects-based* target selection process during the Gulf War permitted the creation and execution of a truly parallel campaign.

. The first assumption of EBO is, "any political entity can be thought of as a system consisting of a number of subsystems."[10] The second assumption is that analysts can identify critical nodes, which when neutralized allow the commander to deny, "the very ability of the enemy to control its vital functions."[11] The effect desired--to either

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[9] David Deptula, *Effects-Based Operations: Change in the Nature of Warfare.* (Arlington, VA: Aerospace Education Foundation, 2001), p. iii.
[10] Ibid., p. 5.
[11] Ibid., p. 8.

temporarily or permanently disable a specific critical node--determines the method of

attack. "Focusing on effects--the end of strategy, rather than the traditional military

means to achieve them through force-on-force--enables us to consider different and

perhaps more effective ways to accomplish the same goal with fewer resources."[12] The

efficiencies achieved through effects-based targeting permitted the striking of enough

targets simultaneously to conduct parallel warfare.

To apply these basic tenets, Deptula used a template conceived by Jack Warden to

dissect the enemy system and identify critical nodes.[13] According to Warden, all enemy

systems are composed of five major subsystems, or strategic centers of gravity (COG).[14]

Figure 1:

Fielded Forces
Population
Infrastructure
Organic Essentials
Leadership
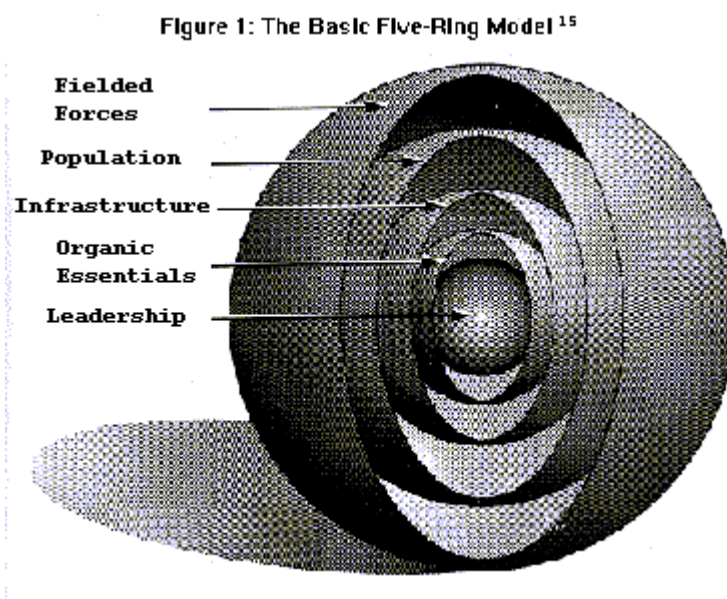
He created a model of concentric rings in which each ring represents an enemy COG

[12] Ibid., p. 26.
[13] See John A. Warden III, *The Air Campaign: Planning for Combat*, (New York, NY: toExcel, 1998), pp. 145-147.
[14] John A. Warden III, "The Enemy as System," *Airpower Journal*, Vol. IX, #4 (Spring 1995).
[15] Ibid., Note Warden uses the terms "organic essentials" and "key production" interchangeably.

and is ordered according to its decisive potential. The most vital COG, leadership, lies at

the heart of the model. Surrounding this core is a second ring representing key

production facilities. A third ring symbolizes key infrastructure. The civilian populace

makes up the fourth ring. Finally, surrounding, and protecting, the other four rings are

fielded military forces. Campaign planners select the appropriate ring(s) to attack based

on: the specific political and military objectives; the disposition of enemy and friendly

forces; and the accessibility of targets.

　　　　According to Deptula, traditional applications of military force (annihilation or

attrition strategies) sought to bring about decisive results by destroying all or part of

enemy centers of gravity.[16] *Effects based* targeting seeks a more limited objective of

merely controlling the enemy's five rings. For example, during the Gulf War planners

deemed it sufficient to bomb Iraqi air control centers only prior to friendly air strikes in

the relevant region of responsibility. The effect was to temporarily shut down air defense

zones when and where needed. This approach required a much smaller expenditure of

aircraft and weaponry than accomplishing the complete destruction of all enemy control

centers. In this manner, EBO produce efficiencies of effort, which allow a commander to

generate a larger, more decisive, impact with the same finite supply of resources.

　　　　Deptula explains that two advances in technology were key in allowing Allied air

forces to execute an EBO campaign. First, stealth technology rendered the enemy's five

strategic centers of gravity more vulnerable to attack than ever before. Second, precision

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[16] Deptula, p. 11.

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munitions provided campaign planners with the means to strike critical nodes with the intent of disabling rather than destroying. Additionally, precision munitions greatly reduced the number of weapons, aircraft, and sorties required to generate a given effect. This freed up more assets to strike even more targets, permitting the cascading effects indicative of true parallel warfare.

The operational concept of *effects-based operations* derives from the overwhelming effectiveness of air power during the Gulf War. Employing a targeting process that viewed the enemy as a system of systems, campaign planners identified critical nodes that, when disabled, allowed friendly commanders to control enemy strategic centers of gravity. Planners leveraged both stealth and precision technologies to produce a parallel campaign. Having discussed the origins of EBO and its application in a major regional conflict, this paper now examines whether Deptula's concept of EBO is relevant to small wars.

The Nature of Small Wars

Within the post-Cold War security environment small wars or "low-intensity conflicts" represent an increasingly relevant part of the emerging US security picture. The threat in a small war is most often an insurgent group or an independence movement vying with a recognized government for power. Also common are criminal organizations operating outside the bounds of international law. Given the nature of the enemy in small wars, the framework, which Deptula uses to apply EBO, has several flaws that do not permit its application to small wars.

In most small wars, the key to victory lies not on the battlefield but with some issue within the social, political fabric of the affected state. "Chief among the dynamic forces that contribute to LIC are change, discontent, poverty, violence, and instability."[17] The most important center of gravity in the low-intensity environment is some socio-political problem that needs a solution. It is not something that military force can target, neutralize, or control. The present articulation of EBO does not address such an intangible source of conflict. Any small war campaign that does not talk to the underlying source of conflict, or at least recognize this unique characteristic of small wars, is not likely to achieve success.

The natures of the five traditional centers of gravity are quite different in small wars as well. The leadership element is often nebulous and/or impossible to target directly. Often, the source of strife in small wars is a grass roots movement. If incumbent leadership capitulates or is eliminated, other members of the movement simply replace them. Friendly forces must also be cognizant that targeting enemy leadership directly can weaken their own cause. If the enemy leader holds even the slightest legitimacy with the general population, killing or maiming high visibility personalities can create a severe backlash against the government.

The second and third strategic rings prove equally elusive in small war. Means of production and infrastructure are generally very primitive. They defy effective neutralization or control by direct attack. Small war actors produce resources, in the form

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[17] Field Manual 100-20 / Air Force Pamphlet 3-20, Military Operations in Low Intensity Conflict, p.1-2.

of food, supplies, and manpower, through coercive taxation of, or voluntary donation

from, the local population. They often resort to theft or illegal market sources to procure

weapons and equipment. Infrastructure in small wars commonly consists of dirt paths

and roads through rough terrain or small overgrown waterways. The enemy often relies

on animal or human labor to transport equipment and supplies. Even, if friendly

intelligence is accurate and available to determine which routes are used, direct attack

simply results in the creation of redundant routing. Attempting to neutralize or control

these forms of industry and transportation with military force is marginally effective.

Targeting these forms of production and supply becomes more police work than military

operation.

The fourth and fifth strategic rings are much harder to differentiate in small wars.

In conventional conflict, the distinction between combatant and civilian is more clearly

defined. In small wars, enemy actors intentionally blur this differentiation. Attempts to

attack, neutralize, or control the enemy's fielded forces in a small war a particularly

difficult prospect. In a small war, the populace is already under considerable stress and

targeting the general population with any kind of direct or indirect pressure tends to drive

them further into the arms of the enemy.

The nature of the environment and enemy actors in small wars precludes effective

employment of the proposed template for applying EBO, however this does not preclude

military commanders from applying the tenets of EBO in the small war arena given a

different framework. The next section of this paper discusses such an alternative model. .

Applying Effects-Based Operations in Small Wars

The current articulation of EBO is inappropriate for employment in small wars because it employs an enemy template designed for conventional conflict. The underlying principles of EBO are suitable for application in the low-intensity arena if another frame of reference, one more conscious of the nature of small wars, is used. In 1970, two Rand analysts, Nathan Leites and Charles Wolf, published an essay on the nature of small wars.[18] In their work, they developed a systemic model for analyzing guerilla organizations. They outlined a framework for defeating the type of movement that typifies the small war actor by identifying vulnerabilities to their subsystems. This framework can aid planners in applying EBO to small wars.

Leites and Wolf based their model on the assumption that "movements, as operating systems, require that certain inputs be converted into certain outputs, or activities."[19] The small war actor must receive inputs, in the form of money, manpower, supplies and intelligence, in order to survive. These inputs come from both inside (endogeny) and outside (exogeny) the relevant theater. For a movement in its infancy, endogenous inputs are usually limited to food, recruits, and some level of tolerance by the civilian populace. However, as the system matures, endogenous inputs take the form of political support and loyalty. Initially the organization obtains food and recruits through coercion or payment. As the movement matures, it attempts to persuade the general

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[18] Nathan Leites and Charles Wolf, Jr., *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts*, (Chicago, IL: Markham Publishing Company, 1970).
[19] Ibid., p. 32.

populace to provide support without payment or coercion.   Most systems also receive

some degree of support from external sources. Predominately financial and logistic, this

support tapers off as the system matures.

Figure 2: The Leites & Wolf Framework [20]
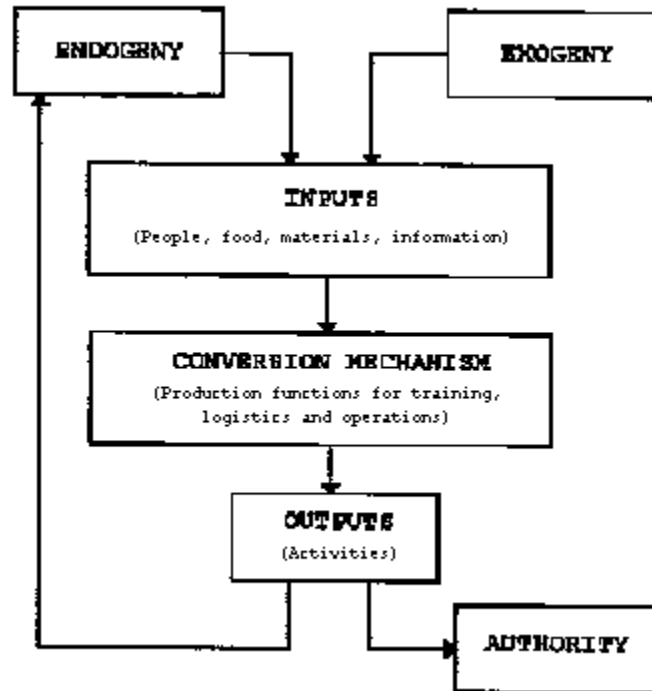
To endure, the enemy organization must convert inputs to useful, effective

outputs. Leites and Wolf assert that efficient organization is the key to an effective

"conversion mechanism."[21] Such efficiency requires sections dedicated to personnel,

financial, and logistic matters, as well as intelligence, communications, and operations.

The enemy must maintain a bureaucracy that mirrors friendly government and military

administration in order to generate effective outputs. Outputs perform one of two

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[20] Ibid., P. 35.
[21] Ibid., p. 34.

functions. Either they attack the friendly government, or they generate support for the enemy system. Forms of attack vary. For instance, propaganda accusing friendly officials of corruption undermines their credibility. Alternatively, the enemy might carry out a guerrilla offensive to attrite friendly forces. Small war actors also generate positive outputs in order to gain political support. For instance, they might provide arbitration in local disputes, which government institutions are too distant to provide. Effective outputs build support for the enemy and weaken the friendly government.

Conceptualizing the small war threat as a dynamic, systemic process permits the planner to identify critical nodes in the organization's subsystems. The commander can then control the enemy's "vital functions" by neutralizing or destroying these nodes. Leites and Wolf outlined a comprehensive, four part small war campaign: interdicting inputs, disrupting conversion, reducing outputs, and building resistance to enemy actions.[22] This approach seeks to attack the enemy's system by applying pressure where it is especially vulnerable. In other words, the model identifies and targets centers of gravity inherent to the small war adversary.

Although their framework shares the same underlying tenet as Warden's model, Leites and Wolf recognize that small wars cannot be carried out with the same means as conventional operations:

> The types of force, and the types of political actions that are most relevant in determining outcomes, are likely to differ significantly between counterinsurgency and other wars. Military techniques that work effectively in counterinsurgency are not likely

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[22] Ibid., pp. 36-37 & 76-83.

to be effective in other wars, and political techniques and strategies that work in counterinsurgency are likely to differ from those that work in other kinds of war.[23]

Leites and Wolf viewed small wars more as police work than traditional military operations. However, they maintained that military forces can, and should, carry out small war campaigns--as long as the commander recognizes that these operations require a different frame of reference than conventional warfare. Leites and Wolf recognized the need to address the unique nature of small wars.

According to Leites and Wolf, interdicting inputs means raising the unit cost of available resources, or simply reducing the amount available, by "construction of barriers that impede the movement of people or supplies from a source to a destination…so at these goods are less readily available."[24] Successful interdiction causes the enemy to divert energy from generating outputs to dealing with production issues. The current "War on Terrorism" provides a salient example of input interdiction. In September 2001, President George W. Bush signed an executive order freezing the American held assets of over twenty organizations with terrorist ties.[25] Primarily targeting al-Qaeda, this tactic resulted in the immediate loss of any resources held in US banks and significantly impaired the organization's ability to finding resources elsewhere.

The Leites and Wolf framework targeted the enemy's conversion mechanism by disrupting its organization. "Creating distrust and frictions within [the] organization by

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[23] Ibid., p. 72.
[24] Ibid., p. 36.
[25] Office of the Press Secretary, "President Freezes Terrorists' Assets," *White House Press Release*, September 24, 2001.

planting rumors; attracting defectors (particularly those from the higher ranks in [the] organization); disseminating credible misinformation about the behavior of [it's] leadership; and generally raising the noise level in [the group's] information system" are all effective means to target the enemy's conversion mechanism.[26] In the early 1980s, the Italian government achieved dramatic success with this tactic against the Red Brigade terrorist organization. The government announced sharp increases in the punishment for individuals convicted of terrorist crimes, while, at the same time, offering light sentences to Red Brigade members who cooperated with the police. Terrorists who turned themselves in, known as the *pentiti*, provided information to police that devastated the Red Brigade and accelerated its downfall.[27]

Reducing outputs comes closest to a conventional role for military assets. Counter force operations necessarily imply the use of force. However, Leites and Wolf affirm, "the application of firepower from ground and air...depends especially on accurate intelligence, so that targeting error in the use of such firepower is reduced."[28] Planners and military commanders executing operations in Afghanistan have gone to great lengths to distinguish adversaries from innocent bystanders. Operations employing this level of intelligence verification before applying force typify the type of output reduction required by the Leites and Wolf framework.

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[26] Leites & Wolf, p. 36.
[27] See Richard Drake, *The Revolutionary Mystique and Terrorism in Contemporary Italy* (Bloomington, IN: Indiana University Press, 1989), p. 105 & 145-151.
[28] Leites & Wolf, p. 36.

Leites and Wolf suggest several methods to strengthen the friendly government's resistance to the small war actor. Physical security measures are a relevant, but small, part of the answer. The most important and effective means available to thwart any small war threat is increasing the legitimacy of the friendly government by addressing whatever sociopolitical issue is at the heart of the conflict. Recent events in Macedonia serve as an example of this type of effort. In response to ethnic Albanian guerrilla forces launching attacks on Macedonian police and security forces, the government opened talks on political reforms with elected Albanian officials and excluded rebel leaders. After a series of meetings, the government granted greater political recognition to its Albanian minority effectively eliminating the guerrilla's justification for rebellion.[29]

The Leites and Wolf model can provide an effective framework for applying *effects-based operations* in small wars. The underlying principles of EBO--viewing the enemy as a system of systems, identifying critical nodes within those systems, and seeking a means to obtain desired effects rather than simply applying force--all dovetail with the assumptions and assertions of Leites and Wolf. This model provides a significant advantage over Warden's model in that it takes into account the unique nature of small war campaigns.

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[29] See Julie Kim, *Macedonia: Country Background and Recent Conflict* (Washington, DC: Congressional Research Report: Library of Congress, November 7, 2001), pp. 8-10.

Conclusion

The need to find solutions to an increasingly challenging post-Cold War security environment combined with notable American military success in both the Gulf War and Kosovo have led to the popularity of the concept of effects-based operations. The underlying principles of EBO are sound and can indeed form the basis for effective campaign planning. Unfortunately, the model used to apply EBO during the Gulf War--Wardens concentric centers of gravity--is really only suitable for large, conventional battles. The Warden paradigm does not lend itself to small wars because the nature of the enemy is quite different than in traditional warfare. Small war threats are usually still in the process of creating the type of resource base and infrastructure that Warden's model assumes already exists. Leites and Wolf recognized the unique nature of small war actors and created a framework based on this observation. Simply by using a different template—like the one created by Leites and Wolf—campaign planners and commanders can effectively apply the basic tenets of *effects-based operations* in the most likely form of future conflict--small wars.

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